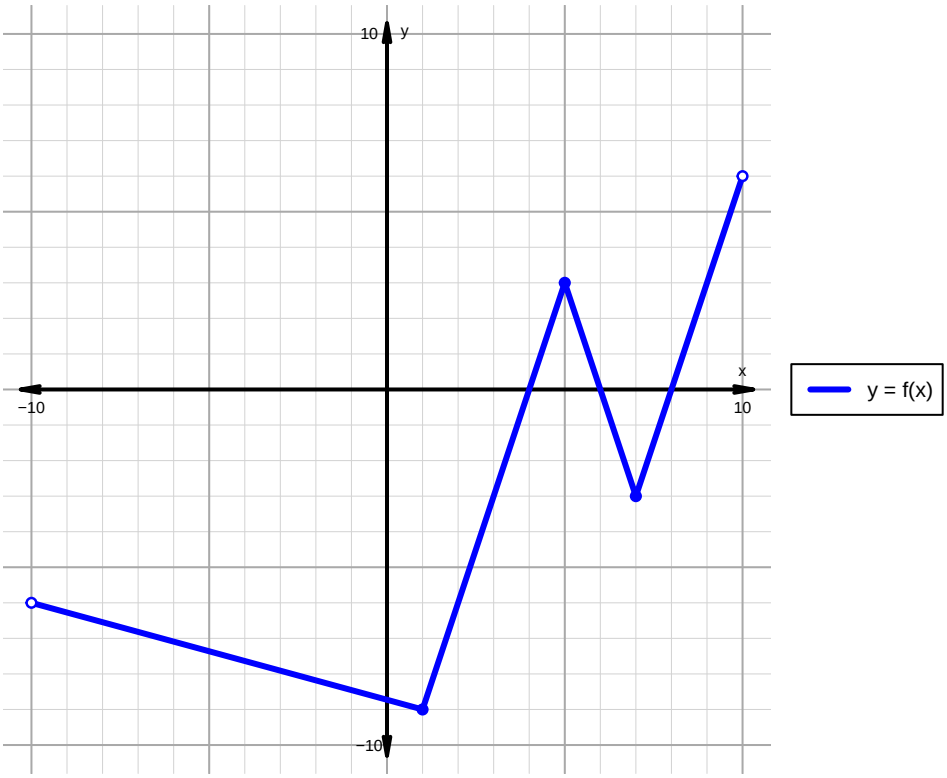
Name: Date:

Intervals, Transformations, and Slope Solution (version 44)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(4, 6) \cup (8, 10)$
Negative	$(-10, 4) \cup (6, 8)$
Increasing	$(1, 5) \cup (7, 10)$
Decreasing	$(-10, 1) \cup (5, 7)$
Domain	$(-10, 10)$
Range	$(-9, 6)$

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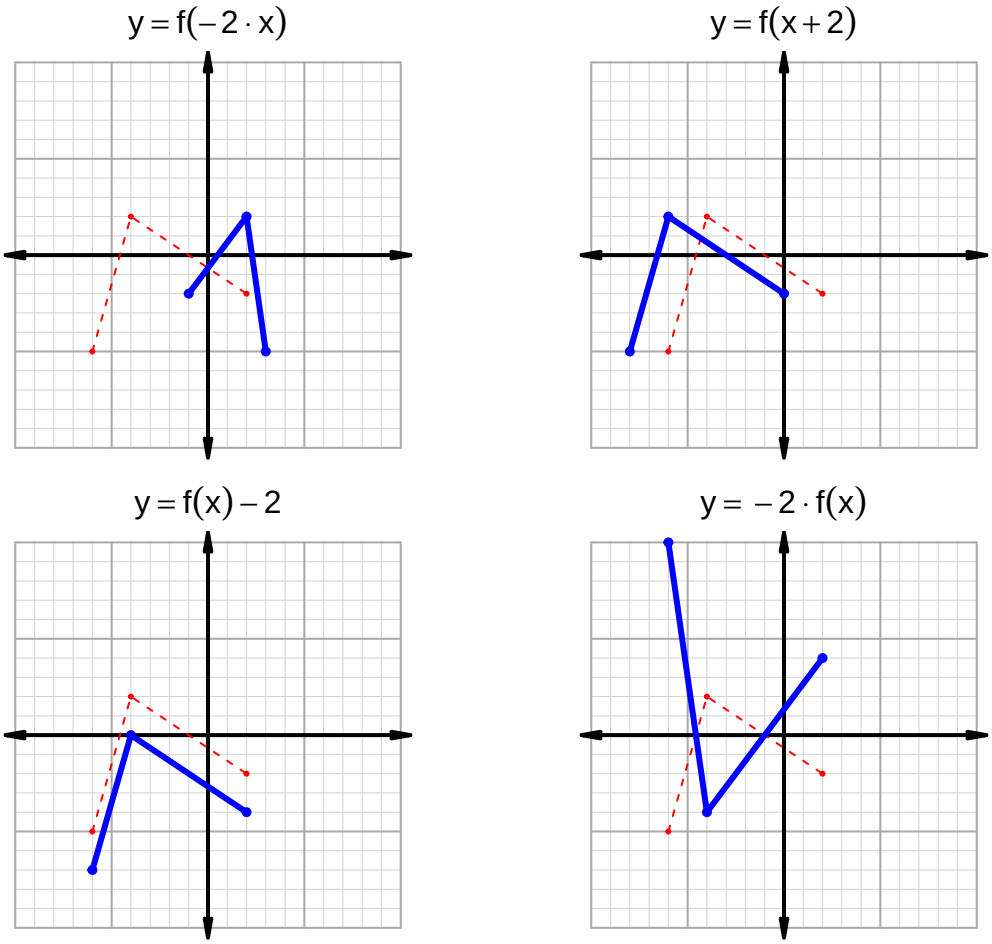
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 57$ and $x_2 = 72$. Express your answer as a reduced fraction.

x	$g(x)$
12	57
39	72
57	39
72	12

$\frac{f(72)-f(57)}{72-57} = \frac{12-39}{72-57} = \frac{-27}{15}$

The greatest common factor of -27 and 15 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{5}$$